Washington State

ENERGY FACILITY SITE EVALUATION COUNCIL

Sumas Energy 2 Generation Facility

Prevention of Significant Deterioration/Notice of Construction
Permit No. EFSEC/2001-02

RESPONSIVENESS SUMMARY

September 6, 2002

TABLE OF CONTENTS

1 Background

On January 4, 1999, Sumas Energy 2, Inc. submitted Application No. 99-1 to the Washington State Energy Facility Site Evaluation Council (EFSEC or Council) to construct and operate the Sumas Energy 2 Generation Facility (S2GF) in Sumas, Washington. The submittal included an application for a Notice of Construction/Prevention of Significant Deterioration (NOC/PSD) permit and an evaluation of Best Available Control Technology (BACT). A revised NOC/PSD permit application and BACT evaluation were submitted to the Council in January 2000 after project design revisions. A ***second revised*** NOC/PSD permit application and BACT evaluation were submitted to the Council on June 29, 2001.

EFSEC also conducted an examination of the Second Revised Application through a formal adjudicative proceeding. A Final Environmental Impact Statement (FEIS) under the Washington State Environmental Policy Act was issued in February 2001. A Final Supplemental Environmental Impact Statement (SEIS) was issued by EFSEC on May 13, 2002, and an Addendum to the Final SEIS was issued on May 16, 2002.

A preliminary approval of PSD/NOC permit No. EFSEC/2001-02 was issued for public comment on September 28, 2001. Public notice of the comment period and of two public hearings on this matter was performed by publication of a legal notice in the Bellingham Herald (9/29/01), The Lynden Tribune (9/28/01), The Abbotsford News (9/29/01), The Abbotsford Times (9/28/01), The Vancouver Sun (9/29/01), and by mailing to EFSEC's interested persons list for this project, and EFSEC's minutes and agendas list (September 28, 2001). Additional display advertisements regarding the location and time of the scheduled public hearings were published in The Bellingham herald (10/25/01), The Lynden Tribune (10/24/01), The Abbotsford News (10/23/01), and the Abbotsford Times (10/19/01). Copies of the draft permit and associated fact sheet were made available for public reference in the city of Bellingham Library, the Whatcom County Library System (Lynden Branch, Everson Branch, Ferndale Branch, and Sumas Branch), the City of Abbotsford (MSA Centennial Library and Clearbrook Library), the EFSEC offices in Olympia, Ecology's Offices in Lacey, Washington, on EFSEC's web site, and to any interested person upon request. Copies of the notices and the draft permit and fact sheet were mailed on September 28, 2001, to a list of 221 persons and stakeholders interested in this proposal.

Public comment hearings were held on this matter on October 30, 2001, in Everson, WA, and on November 1, 2001, in Bellingham, WA. The public comment period closed on November 1, 2001. To be considered, comments had to be postmarked, or delivered by e-mail, to EFSEC's office, no later than November 1, 2001.

The Council received thirteen written comment letters responding to the preliminary approval. l[1]. Ninety-seven persons commented at the public hearings[2].

The following pages summarize the comments received and indicate how the concerns expressed are addressed in the final permit issued by the Council. Some of the comments have been paraphrased or generalized to allow direct responses to the concerns expressed. Copies of the original comment letters are available upon request from the Energy Facility Site Evaluation Council, and will be available for public reference upon finalization of the permit at the following locations:

[1] Several of the citizens who commented orally also submitted written versions of their testimony.
[2] Since the public hearings were open to comments on the draft PSD permit as well as the project in general, oral comments were not limited to the draft PSD permit alone.

Olympia, WA:

Washington Energy Facility
Site Evaluation Council
925 Plum Street SE, Building 4
Olympia, Washington
(360) 956-2121

Washington State Library
Joel M. Pritchard Library
6880 Capital Boulevard South
Olympia, Washington 98501-5513

Abbotsford B.C.:

MSA Centennial Library
33660 South Fraser Way
Abbotsford, B.C. V2S 2B9 Canada
604-853-1753

Clearbrook Library
32320 Dahlstrom Avenue
Abbotsford, B.C. V2T 6N4 Canada
604-859-7814

Whatcom County, WA:

Whatcom County Library System
Lynden Branch
205 - 4th Street
Lynden, WA 98264
360-354-4883

Whatcom County Library System
Everson Branch
104 Kirsch Drive
Everson, WA 98247
360-966-5100

Whatcom County Library System
Ferndale Branch
2222 Main Street
Ferndale WA 98248
360-384-3647

Whatcom County Library System
Sumas Branch
451 - 2nd Street
Sumas, WA 98295
360-988-2501

City of Bellingham Public Library
Main Library
210 Central Ave
Bellingham, WA 98225
360-676-6860

2 Summary of Permit Changes from Draft to Final Approval

2.1 Findings

6. The project will use ~~pipeline quality~~ natural gas with a maximum sulfur content that shall not exceed 2 grains per 100 cubic feet on a seven consecutive day average basis, and 1.1 grains per 100 cubic feet on a consecutive 12 month average basis, as fuel.

8. The following have been determined to be BACT for this project:

Use of standard dry low NO_x burners with selective catalytic reduction (SCR) for NO_x control.

Catalytic oxidation for CO control.

Good combustion practice, using only ~~pipeline quality~~ natural gas with a maximum sulfur content that shall not exceed 2 grains per 100 cubic feet on a seven consecutive day average basis, and 1.1 grains per 100 cubic feet on a consecutive 12 month average basis, for VOC, PM_{10}, sulfur oxides, and organic toxic air pollutants control.

SCR with a 5 ppmdv ammonia slip limit for ammonia control.

2.2 Prevention of Significant Deterioration Conditions

1. The combustion turbines shall be fueled by ~~pipeline quality~~ natural gas with a maximum sulfur content that shall not exceed:

1.1 2 grains per 100 cubic feet on a seven consecutive day average basis.
1.2 1.1 grains per 100 cubic feet on a consecutive 12 month average basis.

7.1 Initial performance and compliance for each turbine ~~and boiler~~ shall be determined by EPA Reference Method 18. Equivalent test methods may be used if approved in advance by EFSEC.

9. No HRSG stack shall exceed daily total PM10 emissions of ~~171~~260 kilograms (573 pounds).

11.5.2 The VOC mass emission rates during startup and shutdown shall be integrated to determine total VOC mass emissions, and included in determination of compliance with the daily VOC mass emission limit in Condition ~~8~~7.

11.4.3 Mass SO_2 emissions during startup and shutdown shall be included in determination of compliance with the daily SO_2 mass emission limit in Condition ~~7~~6.

11.6.3 The PM_{10} mass emission rates during startup and shutdown shall be integrated to determine total PM_{10} mass emissions, and included with the total PM_{10} mass emissions during normal operation to determine compliance with the daily PM_{10} mass emission limit in condition 9.

15.3 Use of velocity factors from 40 CFR, Part 60, Appendix A, Method 19 shall satisfy the requirements for determining exhaust gas flow rate or velocity compliance contained in 40 CFR 75, Emissions Monitoring.

2.3 Notice of Construction Approval Conditions

1. Total emissions of free NH_3 and ammonium salts measured as NH_3 from each HRSG exhaust stack shall not exceed 5 parts per million on a volumetric basis (ppmdv) over a one hour average when corrected to 15.0 percent oxygen. Daily emissions of free NH_3 and ammonium salts measured as NH_3 from either HRSG stack exhaust shall not exceed 35 173 kilograms (~~69.5~~ 382 pounds).

4. No HRSG stack exhaust shall contain CO emissions that exceed 2.0 parts per million on a dry volumetric basis (ppmdv) over a one hour average when corrected to 15.0 percent oxygen. ~~No HRSG stack exhaust shall exceed daily CO emissions of 108 kilograms (240 pounds).~~ No HRSG stack exhaust shall exceed annual CO emissions of 99.9 tons.

~~5.3 The daily CO emission limit on each HRSG stack exhaust is relieved.~~

5.3 No HRSG stack exhaust shall exceed hourly CO emissions of 909 kilograms (2,000 pounds).

5.4 The continuous emissions monitor (CEM) for CO shall be operated during startup and shutdown periods. Total mass emissions as determined from the CEM readings shall be included in determination of compliance with the annual CO mass emission limit in Condition 4.

3 Responses to Comments

3.1 General Responses

3.1.1 Adequacy of Environmental Protection

The PSD permit is based on law and regulation. Integral to the PSD program is the establishment of National Ambient Air Quality Standards (NAAQS). The conditions in any PSD permit must be drafted with respect to the established standards and in accordance with the U.S. Environmental Protection Agency's New Source Review guidance of 1990. If an applicant agrees to build and operate the proposed facility with controls that maintain pollutant emissions below levels that threaten the standards, the applicant is entitled to the corresponding PSD permit. S2GF qualifies for the PSD permit on that basis. Modeled environmental impacts from S2GF are below the Class I and II area significance levels, the Federal Land Managers AQRV Work Group (FLAG) regional haze "concern" level, the Federal Land Manager (FLM) "concern" criteria for sulfur deposition, and the Washington Acceptable Source Impact Levels (ASILs) for toxics, and have a negligible effect on National Ambient Air Quality Standards (NAAQS), Canadian Objectives[3], or Class I area concentration criteria.

3.1.2 Startup and Shutdown Conditions

Startup and shutdown (SU/SD) conditions are short-term events. During these events, the emissions control equipment cannot operate at full efficiency. Consequently, it is unreasonable to set emission limits that are as stringent as those determined to be best available control technology (BACT) under normal operating conditions. Nonetheless, New Source Review guidance requires that emission limits be set that assure no violation of the NAAQS. The conditions specified in the permit have been specified accordingly. Compliance with annual emission limits includes emissions during SU/SD.

3.1.3 SCONOX vs. SCR

SCONOx was rejected as BACT because it is disproportionately expensive on a cost per ton of pollutant reduction basis. The technical feasibility argument has been discussed at length in the fact sheet. The technical feasibility of SCONOX has only been demonstrated on much smaller facilities. The time-honored and prescribed economic analytical method used to evaluate BACT (EPA New Source Review Guidance, 1990) does not include a requirement for the comparison of health-related effects. Health-related effects are considered in the modeling analyses and the numerous established significance thresholds. Using either SCONOx or Selective Catalytic Reduction (SCR), S2GF satisfies all environmental standards under the requirements of the PSD program. Whether due to differences in SU/SD or overall pollutant removal capability, the additional quantity of pollutants that SCONOx may remove is relatively small. Economic analysis indicates it cannot be cost-justified.

[3] The modeling analysis did not show that S2GF threatens attainment of Canadian standards or exacerbates non-attainment. The Canadian environmental agencies agreed in the conclusions of their September 2000 report, Sumas Energy 2 Generation Facility Air Quality Issue Summary.

3.2 Individual Comments

3.2.1 Eric Hansen – MFG Inc.
(Oral comment of 11/1/2001, and supporting written comment dated 11/1/2001)

Mr. Hansen commented that the startup/shutdown (SU/SD) conditions establish a new level of emission monitoring and control during startup and shutdown.

Mr. Hansen is correct that the SU/SD conditions written into this permit are far more detailed than any permit of which EFSEC is aware. In part, this is a result of requirements clarified in U.S. EPA guidance that the permit must contain conditions that assure that at all times, the National Ambient Air Quality Standards (NAAQS) are protected. A definition of SU/SD operation is included in this permit for the purpose of clarity. This proposed project has been extremely controversial. Public comment on the previously denied proposal before the Council was particularly expressive of desire to set specific controls on emissions during SU/SD. The lengthiness of the SU/SD requirements is a response to all of the above. The conditions are well within the ability of the facility to comply.

The analysis of air emissions of sulfur compounds in the Second Revised Application was based on a sulfur content of 1.1 grains per 100 cubic feet (gr/cu.ft) of natural gas. Mr. Hansen requested that the permit be revised to limit the combustion turbines to firing "natural gas" rather than pipeline quality natural gas" because at 1.1 gr/cu.ft., the sulfur content of the natural gas is too high to meet current or proposed federal definitions of "pipeline quality natural gas".

EFSEC agrees to amend the permit to require "natural gas." However, EFSEC will add a condition limiting the maximum allowed sulfur concentration to not exceed 2.0 grains per 100 cubic feet on a seven consecutive day average basis, and 1.1 grains per 100 cubic feet on a consecutive 12 month average basis. The sulfur oxides resulting from the sulfur content of the natural gas are pollutants have a multitude of environmental effects, such as, impacts on NAAQS, Class I area concentration, haze, and deposition impacts, acid rain, and sulfuric acid toxicity. At 2.0 grains per 100 cubic foot, the resulting sulfur oxide emissions will still result in environmental impacts below the Class I and II area significance levels, the FLAG regional haze "concern" level, the FLM "concern" criteria for sulfur deposition, and the Washington ASILs for toxics, and have a negligible effect on NAAQS, Canadian Objectives, or Class I area concentration criteria.

Mr. Hansen requests that the term "boiler" be deleted from Condition 7.1, as no auxiliary boilers are proposed.

"Boiler" will be deleted from Condition 7.1., as it is correct that no auxiliary boilers are proposed.

Mr. Hansen disputes that there is no regulatory basis or any public benefit in limiting the filterable component of PM10 emissions, when total PM 10 emissions are also limited.

Separate approval conditions on filterable and total PM_{10} reflect separate objectives. In the case of filterable PM_{10}, increasing levels are related to the development of poor combustion dynamics, e.g., deterioration of the burners. The approval condition is suggested, if not mandated, by the BACT determination that the only PM_{10} control is "good combustion." Total PM_{10} limits reflect the requirement that the facility live up to its modeled PM_{10} impact. The relative variability of filterable and condensable PM_{10} are not at all known. Neither approval condition alone can be used to satisfy both PSD objectives.

PSD condition 9.1 erroneously indicates 171 kg/day as the metric conversion of a PM 10 emission of 571.2 pounds per day. Mr. Hansen indicates that the metric value should be 259 kilograms per day.

Condition 9 has been corrected to indicate daily emissions of 260 kilograms per day of PM_{10}.

Mr. Hansen requested that the word "either" be deleted from PSD Conditions 11.1.2.1 and 11.1.2.2 as diesel fuel was no longer proposed.

The word "either" was not intended to imply a choice of fuel type, but the alternatives for startup time limits. The condition has been re-phrased to avoid this misinterpretation.

Mr. Hansen requested that the reference to CEMS for exhaust flow rate or velocity be deleted from PSD Condition 15.2, and be replaced by usage of the EPA "f-factors" for natural gas combustion.

Condition 15 has been modified to allow the use of EPA F-factors. When any given fuel is burned under controlled conditions, there will be a precise amount of air per unit of fuel. The volume of combustion products, which includes nitrogen and other inert gases in the air, unused oxygen, and the combustion products from the fuel, will also be a precise quantity relative to the amount of fuel. In other words, once the fuel is specified, the volumetric flowrate of the stack exhaust is defined. EPA has established these relationships scientifically, and published them in Reference Method 19. These are the "f-factors." They are considered to be satisfactorily accurate for regulatory determination of mass emission rates.

Mr. Hansen indicated that the Second Revised Application was based on an emission rate of 15.9 pounds of ammonia per hour (5 ppm). He requested that, in recognition of the 24 hour ASIL for ammonia, the 5 ppm emission limit represent a 24 hour average, and that the corresponding emission rate for each HRSG stack be 382 pounds of ammonia per day.

NOC Condition 2: The ammonia emisisons averaging time will remain at the specified 1 hour average. The daily limited has been corrected to 382 lbs. per turbine.

Mr. Hansen requested that the daily CO emission limit be deleted, as it is redundant with the hourly limit that is imposed.

The requirement that CO concentrations be measured by a CEM eliminates the requirement for a short-term mass emission limit. The daily limit has been deleted. For clarification, the requirement has been amended to NOC Condition 5.4 that SU/SD CO emissions must be included in compliance determination for annual emissions.

3.2.2 Andy Ross, Bellingham Resident

Mr. Ross' first area of concern was that pollution events inside the North Cascades National Park (NCNP) are not adequately modeled. Mr. Ross indicates that he has witnessed the effect of topographic control as regional haze moves into lower Silesia Creek, and how it gets drawn into the NCNP. Mr. Ross further commented that the lack of accurate local topographic control in the pollution dispersion models, in and around the NCNP, calls into question the results of the analyses based upon these models.

The modeling of visibility impacts was performed as required according to 40 CFR 52.21 and the modeling protocol accepted by Washington State Department of Ecology's modeling staff and the federal land managers. The modeling analyses indicated that the emissions from S2GF would not

cause greater than a 5% visibility impact in any Class I area (including the Mt. Baker Wilderness as though it were a Class I area). According to the requirements of 40 CFR 52.21 further analysis is not required.

The wind fields used for this analysis were the highest resolution available at that time and far exceeded any that have been used in the Pacific Northwest to date. The data used for the analysis met the requirements of 40 CFR 52.21and the modeling protocol accepted by Washington State Department of Ecology's modeling staff and the federal land managers.

Mr. Ross commented that more work needs to be done to determine if visibility is protected, based on the location of Mt. Shuksan and the low elevations of the NCNP relative to the elevations of the NCNP.

The analysis has shown that the turbines' plume may sometimes follow the Nooksack River valley towards the lower elevations of the North Cascades National Park: The analysis shows that the incursion of the plume into the Class I area is not sufficient to exceed the five percent visibility criterion.

Mr. Ross attached comments made in response to the Draft EIS issued in February 2000. In addition to the issues described above, these comments addressed the relevance of using air quality data available for Marblemount as representative of the air quality in the NCNP.

Marblemount is considered by Washington State Department of Ecology's modeling staff and the federal land managers to be representative of the air quality in the North Cascades National Park. It is considered to be a compromise between the desire to escape the pollution generated by the populated areas and the need for year-round access. S2GF emissions may, on occasion get drawn into the North Cascades National Park. However, the modeling analysis shows that the frequency is low, the amount of pollutant incursion is small, and that the impacts are below the regulatory thresholds requiring additional analysis.

Mr. Ross attached a set of comments submitted to EFSEC on March 30, 2001, addressing the same concerns as stated above.

See above responses and General Response 3.1.1.

3.2.3 Laurie Hoekstra, Abbotsford Resident

Ms. Hoekstra comments that the area she lives in is already in violation of Canadian defined air quality standards on a regular basis. She argues that the proposed plant cannot be in constant compliance with the existing air quality standards, and that the existing standards need to be tightened because they do not reflect "truly healthy" standards.

See General Response 3.1.

3.2.4 Scott Featheringill, Washington Resident

Mr. Featheringill indicates that the language in the notice of issuance of the Draft permit for public comment was unclear as to how many of the criteria pollutants could be emitted at rates exceeding 100 tons per year.

Emissions in excess of 100 tons per year for any one of the listed criteria pollutants is sufficient to qualify a proposed facility as a "major source", and therefore require review under the PSD program. In the specific case of the S2GF, nitrogen oxides, volatile organics and particulate matter will each be emitted at rates exceeding 100 tons per year.

Mr. Featheringill comments that the modeling data and permit application used for development of the draft permit issued for public comment was speculative or inaccurate. Mr. Featheringill asserts that this circumvents the Congressional intent of Title 40 CFR 52.21.

The data presented by the applicant, and verified by the permit writer, was consistent with the accuracy and reliability requirements of state and federal PSD regulations and review guidelines. Consistency with regulatory requirements is further discussed in general Response 3.1.

Mr. Featheringill requests that the public be allowed to participate in EFSEC's adjudicative process, and have their arguments on the record.

According to the requirements of state and federal laws and regulations, the Council has allowed participation of the public in it's review of the Sumas Energy 2 Generation Facility proposal in the ways described below.

With specific regard to the development of a PSD permit, the Council followed the requirements of Washington Administrative Code 463-39: Regulations for Air Pollution Sources, and solicited public comment both during a written comment period, and at two public meetings, as described in Section 1.0, Background, of this document.

Because the Council's review of a proposal extends beyond the requirements of a PSD permit alone, the Council also convened an adjudicative proceeding to solicit the information it requires to make a recommendation to the Governor of Washington State. According to state laws and rules an integral part of such proceedings is the solicitation of public comment. The public was informed by mailings and by publications in local newspapers that written comments about the proposal would be accepted, and public testimony sessions would be held. Such public witness testimony sessions were held on October 30, 2001 (Everson, WA) and November 1, 2001 (Bellingham, WA), to accept oral comments. These opportunities for comment were open to discussion of all environmental impacts of the proposal under review.

3.2.5 Stebbe

Mr. Stebbe comments that the additional increased contribution to air pollution by this proposal will have a negative impact on the environment and on the health of the residents of the Fraser Valley. Mr. Stebbe discusses efforts by Canadian governments to manage ozone concentrations in the Fraser valley. He concludes that even though the proposal has been found to comply with all applicable federal new source performance standards, it will still contribute to the degradation of the air quality in the Fraser Valley.

See General Response 3.1.1

3.2.6 Kirk Johnstone – Environment Canada

The draft permit makes reference to "either fuel" at page 9, lines 225, 229, 233.

EFSEC acknowledges that this is a typographical error and that the S2GF will use only natural gas. The language has been corrected.

Mr. Johnstone presents additional information about Canadian Air Quality Objectives and health Impacts of Air Quality.

The September 11, 2000 report from the BC Ministry of Environment, Lands, and Parks, Environment Canada - Pacific and Yukon Region, and the Greater Vancouver Regional District, Sumas Energy 2 Generation Facility, Air Quality issue Summary concluded that "it is unlikely that the facility emissions will cause additional exceedances of the new Canada Wide Standard for ground level ozone … or result in an increase in ozone concentrations where (the standard) is already exceeded or … close to being exceeded." This report was considered in preparation of the fact sheet and the draft permit.

Mr. Johnstone comments on the effectiveness of pollutant removal of SCONOX, versus that of SCR, and how this should be considered in addition to cost effectiveness. Mr. Johnstone indicates that the fact sheet does not account for any potential costs associated with the health effects of air quality.

See General Response 3.3.

Mr. Johnstone comments that although his organization acknowledges the addition of different types of startup and shutdown emission limits, it lacks daily NOx emissions limits under startup and shutdown events, and does not contain any restrictions on the duration of start-up and shut down conditions. He requests that the council ensure that a daily emission limit is in place for NOx and other regulated pollutants during startup and shutdown conditions.

Startup and shutdown emission limits: See General Response 3.1.2.

3.2.7 RWDI Inc., on behalf of the Province of British Columbia

Rowan Williams Davies and Irwin Inc. (RWDI) requests that an appropriate upper limit on NOx emission be established during start-ups and shutdowns.

See General Response 3.1.2. regarding SU/SD for NO_x and CO.

The draft permit does not give a realistic view of actual VOC emissions during conditions related to "hot starts"

VOC concentrations in the stack exhaust will be higher during SU/SD until the system warms up. However, stack exhaust volume is in direct proportion to operating rate. In other words, during SU/SD, the concentration goes up, but the mass goes down. The net result is a mass emission of VOCs during SU/SD that is unlikely to exceed short term emission rates during normal operation.

The permit limit for CO emissions during startups and shutdowns should be reduced to 1000 lb/hr.

The CO emission limit in the notice of construction for SU/SD results in ambient air concentrations of 5% of the NAAQS and 12% of the Canadian Air Quality Standard. As discussed in General Response 3.1.2, the indicated emission concentration limit satisfies the requirements under prevention of significant deterioration for environmental protection.

The potential maximum annual emissions for NOx, CO and VOC are not maximums because they do not account for the possible higher emissions if frequent start-ups occur.

As specified in the draft permit, NO_x emissions during SU/SD must be counted toward the annual emission limit (see permit conditions 11.3.2), and VOC emissions must be counted toward the daily limit (see permit condition 11.5.2). Condition 5.4 of the Notice of Construction has been modified to explicitly require that total mass emission of CO during startup and shutdown are included in determination of compliance with the annual CO mass emission limit. Also, see General Response 3.1.2.

RWDI requests that the permit include provisions to avoid startups during the daytime during potential smog conditions, so that short term high impacts to ground level ozone do not occur.

As explained in General Response 3.1.1., the S2GF as conditioned in the final PSD/NOC permit will meet all state and federal requirements that are protective of the NAAQS, and will not threaten attainment of Canadian standards or exacerbates non-attainment in the Fraser Valley.

RWDI requests that the fact sheet describe the direct and indirect limitations the permit would place on start-ups and shut downs through the limitations on annual emissions of criteria pollutants, and then assess the air quality impacts associated with those events. Interested parties should be given an opportunity to review and comment on that revised analysis.

The comment has been noted. The basis for the SU/SD conditions established in the permit is explained in detail in §2.2.9 of the fact sheet. See also General Response 3.1.2 and RWDI response 3.2.7, above. EFSEC believes RWDI's request for explanation of SU/SD conditions has been reasonably addressed.

RWDI listed a series of typographical corrections in the summary table and Condition 11.5.2.

The corrections are noted and incorporated into the final permit.

RWDI comments that the Fact Sheet should make clear that a determination that PSD and/or BACT requirements are met does not constitute an assessment of the acceptability of the facility's impacts on Canadian air quality.

EFSEC has given extensive consideration to concerns expressed by the Canadian environmental agencies and Canadian citizens' comments. In particular, EFSEC invited the Canadian environmental agencies to submit analyses of the potential impact of S2GF on Canadian territory. The modeling analyses considered in preparation of this permit did not show that S2GF threatens attainment of Canadian standards or exacerbates non-attainment. The Canadian environmental agencies agreed in the conclusions of their September, 2000 report, Sumas Energy 2 Generation Facility Air Quality Issue Summary.

3.2.8 Scott McDonald, British Columbia Lung Association

Mr. McDonald presented additional information regarding the impact of the impact of particulate pollution on human health (Selected key studies on particulate matter and health: 1997 – 2001.

See General Response 3.1.1. The NAAQS are established to be protective of human health.

3.2.9 Doug Caldwell, Abbotsford Resident

Mr. Caldwell comments that the air shed has already too much air pollution compared to the 1960's and cannot handle any more.

See General Response 3.1.1.

Mr. Caldwell comments that SE2 has not tried to look at possible cleaner technology.

S2GF submitted an analysis of the required best available control technology required under the PSD program. Also, see General Response 3.1.3.

Mr. Caldwell comments that SCR is not safe, and that the small particles formed by ammonia slip are dangerous.

SCR has been in operation for up to twenty years at facilities all over the world with no indication of safety concern. It is the generally accepted control technology of choice for nitrogen oxide emissions control. The ambient concentrations of ammonia salts resulting from ammonia slip are a tiny fraction of any known health or environmental risk.

Mr. Caldwell comments that the air shed will get worse with other proposals coming forward.

Every proposal is considered independently, and must justify itself in terms of its additional environmental impact.

Mr. Caldwell comments that power lines cause cancer.

EFSEC has analyzed the impacts of electromagnetic fields associated with this proposal in the Final Environmental Impact Statement issued for this proposal in February 2001. This is not part of the PSD permitting process.

3.2.10 Brian Carpenter, Rebound

Mr. Carpenter's comments were in support of the permit being issued as drafted.

3.2.11 Margaret Curtis, Bellingham Resident

Ms. Curtis' comments were in support of the permit being issued as drafted.

3.2.12 Otto Herman, Rebound

Mr. Herman's comments were in support of the permit being issued as drafted.

3.2.13 Terry Raymond, Fraser Valley Regional District

Mr. Raymond comments that the elimination of the diesel backup fuel, and fuelling the power plant with natural gas only will reduce short term air quality impacts associated with diesel burning, but will not significantly reduce the total annual emissions of finer particulate. Therefore this measure does not reduce the concerns for regional air quality, that at some locations, is already above reference levels where statistically changes in human health can be observed.

> Modeled air quality impacts attributable to particulate emissions anticipated from the S2GF under permitted conditions are substantially below all US and Canadian air quality standards. The September 2000 Canadian joint report, Sumas Energy 2 Generation Facility Air Quality Issue Summary, where short term emissions from diesel firing were considered, concluded that potential emissions from the S2GF would not substantially impact air quality in B.C. The evaluation of the impact of a source is based on the resulting ambient concentrations, and not on annual emission rates. With a reduction in the short term emissions, and a resulting decrease in short term ambient air concentrations, impacts of the S2GF will be even lower.

Mr. Raymond comments that despite the FVRD's strong opposition to the siting of the S2GF, the FVRD would only support emission reduction technologies that do not introduce ammonia into the atmosphere, and are capable of meeting an emission limit for nitrogen oxides of 1 ppm or less, if the project proceeds at the proposed location. The selective catalytic technology fails to meet this limit.

> Modeled air quality impacts attributable to ammonia and NOx anticipated from the S2GF under permitted conditions are substantially below all US and Canadian air quality standards. The September 2000 Canadian joint report concluded that potential NO_x and ammonia emissions from the S2GF at both the previous NO_x permit levels (3 ppm) and the current NO_x permit levels (2 ppm), and 10 ppm ammonia would not substantially impact air quality in B.C. The allowed maximum emissions are the lowest ever permitted in the U.S. or Canada. No control technology (including SCONOx) has demonstrated its ability to consistently maintain emissions below the proposed FVRD limits.

Mr. Taylor comments that the S2GF proposal to offset local impacts of pollutants such as fine particulate through implementing offset projects in the airshed is very unlikely to happen in close proximity to the proposed power plant. Therefore local air quality impacts and associated health concerns of the proposed power plant may remain as a major concern to the residents of Abbotsford and neighboring communities.

> The Council has required that the S2GF procure offsets in the Fraser Valley airshed. If the S2GF is not able to negotiate such offsets, the S2GF must make a payment into a fund to be administered jointly by the Washington Department of Ecology and the British Columbia Ministry of Water, Land and Air Protection, or other agencies or organizations approved by EFSEC, and the funds to be used for the improvement of air quality in the Fraser Valley Airshed. The impact of the offsets will

therefore provide a net benefit to the Fraser Valley airshed, including Abbotsford and the neighboring communities.

3.3 Oral Comments

As stated in Section 1. Background, above, numerous oral comments were received regarding the environmental and health impacts of air emissions from this proposed facility. No comments were received specifically addressing the proposed approval conditions in the draft permit. Commentors did express concern about the existing air quality in the vicinity of the proposal and in the Fraser Valley in Canada, about the influence of meteorology and topography on the dispersion of proposed emissions from the S2GF, about the health impacts of air pollution, and about the deposition of air pollutants onto soils and into water bodies. General Response 3.1.1 addresses these concerns.